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HEWLETT PACKARD COMPANY
P O BOX 272400, 3404 E. HARMONY ROAD
INTELLECTUAL PROPERTY ADMINISTRATION
FORT COLLINS, CO 80527-2400

EXAMINER
PICH, PONNOREAY

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JERRY.SHORMA@HP.COM
mkraft@hp.com
ipa.mail@hp.com

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BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Application Number: 10/637,172
Filing Date: August 07, 2003
Appellant(s): RAMARAO ET AL.

_____
John P. Wagner Jr. (Reg. #: 35,398)
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 5/18/08 appealing from the Office action mailed 1/10/08.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

2002/0144156	Copeland, III	10-2002
6,988,208	Hrabik et al	1-2006
6,134,591	Nickles	10-2000

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claims 1-6, 8-11, 14-18, and 20 are rejected under 35 U.S.C. 102(a) as being anticipated by

Copeland III (US 2002/0144156).

Claim 1:

Copeland discloses accessing port binding information (i.e. information listing which ports are

actually being used) in a port authorization file (i.e. "seen today" list, see paragraph 64) in said

network; querying a port mapper (i.e. "profile list", see paragraph 63) for a mapped port assignment

(i.e. map of actual "allowed" ports for "allowed" operations); comparing said mapped port assignment

to said port binding information; and initiating a response (i.e. alarm) to said comparing (paragraphs

62-66).

Note that as discussed in the cited paragraphs of Copeland, two lists are kept by his invention

(paragraphs 63-64). The "profile list" discussed in paragraph 63 keeps track of the port number of all

allowed operations. This "profile list" corresponds to the S_PROFILE and C_PROFILE rows seen in

the database tables of Figure 2 and is considered by the examiner to indicate mapped port

assignment. The "seen today" list discussed in paragraph 64 keeps track of actual operations seen

and the ports used by those operations. The "seen today" list corresponds to the SERVER and

CLIENT rows seen in the database tables of Figure 2. The actual ports used are considered by the

examiner to be "port binding information".

Note that to determine whether or not a host is operating "Out of Profile" (as discussed in

paragraph 65), the port binding information and mapped port assignment as recorded in the "seen

today" list and "profile list" must be accessed/queried to obtain the information contained therein so

that a comparison could be done to determine if a port is being used which is not listed as allowed in the "profile list". Paragraph 66 indicates that should a port be detected that is in use which is not allowed, an alarm is initiated as a response.

Claim 8:

Copeland discloses:

1. A port assignment file (i.e. "profile list") comprising a port authorization in said network (paragraphs 62-63).

2. A port assignment file verifier (i.e. port profiling engine 155), wherein said verifier is enabled to verify a port assignment against said port authorization (paragraph 66). *The port profiling engine compares ports that are actually seen to be in use with what is authorized to be in use and generates an alert if they are different.*

Claim 15:

Copeland discloses:

1. A network server coupled to a network (paragraph 41 and Figures 1-2).

2. A network client communicatively coupled with said network server via a port (paragraph 41).

3. A plurality of provisionable services (i.e. network services) enabled to communicate with said network server via a plurality of ports (paragraphs 45 and 62).

4. A port map verification tool (i.e. port profiling engine 155) enabled to compare a port assignment to a port authorization in said network (paragraph 66). *The port profiling engine compares ports that are actually seen to be in use with what is authorized to be in use and generates an alert if they are different.*

Claims 2, 9, and 16:

Copeland further discloses wherein said network comprises a utility data center, i.e. server (paragraphs 38-39).

Claim 3:

Copeland further discloses wherein said mapped port assignment comprises static port binding data (paragraph 44 and Fig 2, C_PROFILE and S_PROFILE rows in COMMON SERVICES BIT MAP table).

Note that frequently used services are assigned fixed/static port numbers. The HTTP service, for example, is bound to static port 80.

Claim 4:

Copeland further discloses wherein said port authorization file comprises fixed port assignments (paragraph 81 and Fig 2, CLIENT and SERVER rows in COMMON SERVICES BIT MAP table).

Note that the cited portion of Figure 2 shows that the host uses at least fixed port 80 as both a client and a server. As such, the port authorization file comprises fixed port assignments indicating which fixed ports were actually used by the host as a client and/or server.

Claim 5:

Copeland further discloses wherein said port authorization file is generated upon network initialization (paragraph 74).

Claims 6, 11, and 18:

Copeland further discloses wherein said response comprises an alarm (paragraph 66).

Claim 9:

Claim 9 is also alternatively rejected for the same reasons given in claim 8. The wherein clause further recited in claim 9 does not appear to further limit the structure of the claimed network port map verification tool. Instead, the clause further defines the network, which is not a part of the claimed network port map verification tool. As such, the wherein clause further recited in claim 9 is not given patentable weight, see MPEP 2111.04.

Claims 10 and 17:

Copeland further discloses wherein said network port map verification tool is further enabled to initiate a response, i.e. alarm, to a port assignment anomaly (paragraph 66).

Claims 14 and 20:

Copeland further discloses wherein said network port map verification tool is enabled to operate in a remote procedure call environment (paragraph 61).

A client-server environment is a remote procedure call environment since the server executes various procedures depending on remote requests received from the client.

Claims 7, 12, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Copeland III (US 2002/0144156) in view of Hrabik et al (US 6,988,208).

Claims 7, 12, and 19:

As per claim 7, Copeland does not explicitly disclose wherein said response comprises a system lockdown. However, this limitation is disclosed by Hrabik (col 7, lines 16-24).

Both Copeland and Hrabik are concerned with computer and network security. At the time applicant's invention was made, it would have been obvious to one of ordinary skill in the art of computer and network security to modify Copeland's invention according to the limitations recited in

claim 7 as per Hrabik's teachings. One skilled would have been motivated to do so because a system lockdown in response to an intrusion detection would minimize the amount of damage an intruder can cause to the system.

Claims 12 and 19 further recite a limitation substantially similar to what is recited in claim 7 and are rejected for much the same reasons discussed in claim 7.

Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Copeland III (US 2002/0144156) in view of Nickles (US 6,134,591).

Claim 13:

As per claim 13, Copeland does not explicitly disclose wherein said network port map verification tool is enabled to verify a digital signature related to said port authorization. However, Nickles discloses a security server enabled to verify a digital signature related to a access request (col 10, lines 10-38). Note that an access request to a server typically includes the port number a client wishes to access or be authorized to access, thus access authorization is related to port authorization. As such the digital signature taught by Nickles is related to port authorization.

At the time applicant's invention was made, it would have been obvious to one of ordinary skill in the art to modify Copeland's invention according to the limitations further recited in claim 13 by incorporating the digital signature verification functions of the security server disclosed by Nickles within the network port map verification tool of Copeland's invention. One of ordinary skill would have been motivated to do so because it would allow Copeland's invention to verify the identity of the person making a connection request. This would enhance the security of networks protected by Copeland's invention since unauthorized port access could be prevented rather than just detected.

(10) Response to Argument

Note that the examiner is using the same headings as appellant so that the reader may more

easily follow which traversal corresponds to which argument presented by appellant in the appeal

brief filed on 5/12/08.

1. Whether Claims 1-6, 8-11, 14-18, and 20 are anticipated by Copeland III (US 2002/0144146).

Appellant argues on page 10 that Copeland does not teach "comparing said mapped port

assignment to said port binding information". Appellant argues that with the present claimed

invention, the port binding information is established during initialization of the network and is not

based on observed data flow as with Copeland. These arguments were directed towards claim 1 and

were stated as being applicable to independent claims 8 and 15 also. The examiner respectfully

disagrees that Copeland does not teach this limitation under contention and that the arguments for

claim 1 are applicable to claims 8 and 15 also.

As per the argument that Copeland does not teach "comparing said mapped port assignment

to said port binding information", the examiner notes that information listed in the "seen today" list as

seen in Figure 2 and discussed in cited paragraphs 62- 64 can be considered "port binding

information" since this information describes which services were observed to actually use a

particular port, i.e. which services were actually bound to a particular port. The examiner respectfully

submits that the plain meaning of "port binding information" as understood by a person of ordinary

skill in the art is any information related to port binding. One skilled should understand that for a

service to use a port means that the service was bound to the port, thus the information listed in the

"seen today" list could broadly and reasonably be interpreted as "port binding information". The port

profile of allowable network services as discussed in paragraph 62 is considered mapped port

assignment because it maps ports to services that are allowed to use the particular ports. Paragraph

66 discuses how the port profiling engine compares the list of allowed services (i.e. the mapped port

assignment) to the list of services actually observed to use a particular port (i.e. port binding

information) to decide whether or not to provide an alarm to the system operator. As such, the

limitation of "comparing said mapped port assignment to said port binding information" is disclosed by

Copeland.

As per the argument that the port binding information is established during initialization of the

network, the examiner respectfully notes that there is nothing recited in any of the claims under

contention which requires one to interpret that port binding information is established during

initialization of the network. It is assumed that this argument by appellant is colored by what is

disclosed in the specification. However, the examiner respectfully notes that although the claims are

interpreted in light of the specification, limitations from the specification are not read into the claims.

See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

As per appellant's comment that the arguments for claim 1 are applicable to claims 8 and 15

also, the examiner notes that claims 8 and 15 do not recite the limitation of "comparing said mapped

port assignment to said port binding information", thus the arguments appellant has presented for

claim 1 are not applicable to these claims. In fact, "port binding information" is not recited at all in

claims 8 and 15, thus it is unclear how the arguments for claim 1 could be applicable to claims 8 and

15. Claims 8 and 15 were separately rejected as being anticipated by Copeland (see the above

rejections) and appellant did not provide any arguments applicable to claims 8 and 15, thus it is believed that the rejections for claims 8 and 15 should be maintained.

Appellant argues in the first paragraph of page11 that "port binding information" being "information listing which ports are actually being used" is incorrect because the specification states that port binding information is established during initialization of the network and includes the permanent bindings which are those ports assigned permanently to particular services or clients. In response to this argument, the examiner respectfully notes once more that limitations in the specification that are not claimed cannot be given patentable weight. Further, the specification disclosing that in one embodiment of the invention (see page 9 of the specification) that port binding information is established during initialization of the network and includes the permanent bindings which are those ports assigned permanently to particular services or clients is not an explicit definition of "port binding information". The disclosure of what something may be in one embodiment does not exclude it from being other things and having other applicable definitions. Absent an explicit definition, the plain meaning of "port binding information" as understood by a person of ordinary skill in the art is any information related to port binding, which would include the information in the "seen today" list in Copeland.

Appellant argues in page12 that appellant has acted as his/her own lexicographer, thus "port binding information" must be afforded the definition defined by appellant in the specification since the definition used by appellant serves to point away from the definition used by the examiner. The examiner respectfully disagrees that appellant acted as his/her own lexicographer.

At no place in the specification did appellant indicate that "port binding information" is intended to have a special definition, nor was any explicit definition of "port binding information" given that is

meant to apply to all the embodiments of applicant's invention. Page 9 of the specification which

appellant has repeatedly pointed to as allegedly containing a definition for "port binding information"

via appellant acting as his/her own lexicographer instead discloses <u>one embodiment</u> of the invention

which describes port binding information as having certain features in the particular <u>embodiment</u> or

capable of having certain features. The first paragraph on page 9 of the specification describes that

in <u>one embodiment</u>, port binding information is established when the network is initialized and

includes the permanent bindings which are those ports assigned permanently to particular services or

clients. This is not a definition. Instead, it is a description of what port binding information <u>could be</u> in

<u>one embodiment</u>, but does not exclude that port binding information could be other things. Likewise,

the last paragraph on page 9 of the specification merely describes what port binding information could

include or "can also include". Nowhere in page 9 or anywhere else in the specification is there any

evidence that appellant intended to act as his/her own lexicographer such that "port binding

information" must be afforded a particular meaning as defined by appellant. In fact, the first

paragraph on page 8 of the specification and the last paragraph found in the specification contain

evidence to the contrary. These paragraphs indicated that the scope of the invention is to be defined

only by the claims and that the embodiments discussed in the specification were not meant to limit

the invention. If the embodiments discussed are not meant to limit the invention, then it is impossible

that appellant acted as his/her own lexicographer in the writing of the specification.

In the second paragraph of page 12, appellant argues that the "port binding" words of the claim

must be given their plain meaning as understood by those of ordinary skill in the art. The examiner

respectfully submits that as evidence from the discussion above, "port binding" was given its plain

meaning as understood by a person of ordinary skill in the art. For a particular service to use a

particular port, the service must be bound to the port, thus the information in the "seen today" list is related to "port binding" since the information details which services were observed to use which ports, thus describing the binding of a particular port to a particular service.

In the same paragraph, appellant once again argues that "port binding information" is a terminology that is clearly defined in the specification as being established during initialization of the network and includes the permanent bindings which are assigned permanently to particular services or clients. The examiner has already addressed how contrary to appellant's argument, no such explicit definition exists for "port binding information". At best, appellant's specification and figures described what port binding information <u>could be</u> in a <u>particular embodiment</u>, but does not prohibit other definitions from applying. As such, there is no requirement to read such a definition into the claim since the claim does not define port binding information as having those features.

Appellant argues in the paragraph spanning pages 12-13 that in opposition to the "port binding information" of the present invention, the "seen today" list of Copeland is vulnerable to attack and if the "seen today" list is compromised, there is no way of identifying unauthorized port usage, while in the present invention, if the "mapped port assignment" is compromised, the unauthorized port usage will be identified when the "mapped port assignment" is compared to port binding information because they will be different. Appellant argues that because of this, Copeland fails to teach "comparing mapped port assignment to port binding information" as claimed. The examiner respectfully notes that there is no limitation recited in any of the independent claims which requires that port binding information and mapped port assignment are invulnerable to attack. Thus, if it is appellant's argument that Copeland does not anticipate the claimed invention because these two items of Copeland could be vulnerable, the argument is not persuasive because appellant is once again arguing limitations

that are not claimed, thus cannot be considered. In fact, claims 8 and 15 do not even mention "port

binding information". Further, the invention <u>as claimed</u> (in claim 1) could also have vulnerable port

binding information and mapped port assignment. The examiner further notes that in paragraph 66,

Copeland's invention also detects improper port usage by comparing a list which defines which

services are allowed to use particular ports with a "seen today" list which details which services were

observed to actually use particular ports. If there is any inconsistency, an alarm is raised.

2. Whether Claims 7, 12, and 19 are patentable over Copeland III (US 2002/0144156) in view of

Hrabik (US 6,988,208).

Appellant argues in pages 13-14 that Hrabik does not teach "comparing said mapped port

assignment to said port binding information". The examiner respectfully notes that whether or not

Hrabik teaches this limitation is a moot point because as evidenced from the discussion above,

Copeland teaches this limitation and it was Copeland's teachings that were relied upon to show this

limitation, not Hrabik.

3. Whether Claim 13 is patentable over Copeland III (US 2002/0144156) in view of Nickles

(6,134,591).

Appellant argues in page 15 that Nickles does not teach "comparing said mapped port

assignment to said port binding information". The examiner respectfully notes that whether or not

Nickles teaches this limitation is a moot point because as evidenced from the discussion above,

Copeland teaches this limitation and it was Copeland's teachings that were relied upon to show this limitation, not Nickles.

Appellant argues Nickels teaches away from the present invention by describing in column 9, lines 25-30 "the random port generator module 88 randomly selects an unused port for which communication." Appellant states that random port selection of port assignment would greatly compound the difficulty of maintaining the "port binding information" of the present invention. The examiner respectfully notes that this argument appears to once again be based upon the incorrect assumption that one must apply the same definition of "port binding information" to the claim as what appellant now wants. As discussed above already, there is no requirement in the claims to use the same definition of "port binding information" as appellant is now wanting. Further, appellant has not presented any evidence that random selection of port assignment would greatly compound the difficulty of maintaining port binding information. Mere arguments from appellant or appellant's attorney cannot take the place of actual evidence, thus there is no reason to believe that Nickels teaches away from the present invention as claimed.

It is respectfully submitted that all of appellant's arguments have been traversed. The claims as currently presented are not in condition for allowance.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/Ponnoreay Pich/

Examiner, Art Unit 2135

Conferees:

/KIMYEN VU/

Supervisory Patent Examiner, Art Unit 2135

/HOSUK SONG/

Primary Examiner, Art Unit 2135